

REMARKS/ARGUMENTS

The final Office Action dated January 17, 2006 has been carefully considered. Claims 1 and 3-6 were pending in the Office Action with claim 1 being in independent form. By the present Amendment claim 1 has been amended to further clarify the features of the present application and claim 4 has been canceled without prejudice or disclosure.

Claims 1 and 3-6 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of Maki, U.S. Patent No. 6,689,984, in view of Japanese Patent Publication No. 200131331 to Inazumachi and U.S. Patent No. 6,771,483 to Harada et al. Reconsideration of the rejection is respectfully requested.

Independent claim 1 has been amended to provide, in part, for, “[a] susceptor device comprising:...a convex fitting section disposed on a peripheral section on either one of the ceramic base body or the temperature controlling section; and a concave fitting section disposed on a peripheral section of the ceramic base body or the temperature controlling section so that the convex fitting section and the concave fitting section engage together, and the insulating sprayed layer and the bonding agent layer are sealed from thereoutside.” Claim 4 has been canceled, without prejudice or disclaimer, since it is now redundant to amended independent claim 1.

The Examiner contends that Inazumachi discloses the claimed convex fitting section and concave fitting section that engage together and seal the insulating sprayed layer and the bonding agent layer as is required by amended claim 1 of the present application. Applicant respectfully disagrees.

Inazumachi discloses a monolithic structure 37 which protects electrode 32, thermal expansion buffer layer 33, bonding layer 34 and dielectric layer 35. Inazumachi, however, does not disclose a convex fitting section and a concave fitting section which engage to seal the insulating sprayed layer and the bonding agent layer as is required by amended claim 1 of the present application. For this reason alone, the rejection of claims 1 and 3-6 under the judicially created doctrine of obviousness-type double patenting should be reconsidered and withdrawn.

Further, the present invention is characterized by replacing conventional ceramic supporting plates with an insulating sprayed layer of sprayed ceramic that has a thickness of 20

μm to 500 μm in order to improve heat exchange efficiency and plasma-transmission. As a result, a semiconductor wafer and a temperature controlling section thickness can be provided with cooling medium flow paths which are closer than when conventional ceramic plates are used.

As noted in Applicant's previous response, Maki discloses a first substrate 21 and a second substrate 23 are made of the same composition, or the principal component is the same insulating material in both of the substrates, (column 4, line 57 - column 5, line 5), in order to prevent cracks from being generated in a susceptor due to a difference of thermal expansion coefficients between the substrates. In Maki, there is no intention to improve the thermal conductivity between the temperature controlling section and a wafer mounted on a top surface of the susceptor. Therefore, the susceptor disclosed in Maki lacks the following features claimed in the rejected claims: a flow path; an insulating sprayed layer formed by a sprayed ceramic; and the ceramic insulating layer having 20 μm to 500 μm thickness.

The Examiner contends that Inazumachi discloses an insulating sprayed layer in insulator layer 6 of Inazumachi, however, the Examiner later concedes that Inazumachi does not disclose that the layer is formed by spraying or that it has a thickness of 20 μm to 500 μm . The Examiner however, contends that Harada discloses an electrostatic chuck with an inner electrode 4 and insulating layers 3, 4 that cover the electrode. The Examiner further argues that Column 3, lines 25-33 of Harada discloses spray coated layers with a thickness of 30-300 microns. The Examiner contends that the motivation to provide the apparatus of Maki as modified by Inazumachi and Harada to provide sprayed insulating layers with a thickness of 20 μm to 500 μm is to provide high productivity and good coating adhesion as is allegedly taught at Column 3, lines 4-11 of Harada. Applicant respectfully disagrees.

While Harada may disclose an insulating sprayed layer with a similar thickness as recited in claim 1 of the present application, there is no suggestion in Harada, Inazumachi or the art as a whole to combine such a sprayed insulating layer with the apparatus of Maki as suggested by the Examiner. As is noted above, the advantage of replacing conventional ceramic supporting plates with the sprayed insulating ceramic layer of the claimed thickness is to allow for flow paths that

are closer to the temperature control section than could be achieved using conventional ceramic plates. None of the cited references suggest such an advantage.

The Examiner has made reference to Column 3, lines 4-11 of Harada as allegedly providing the motivation to combine these references, however, no such motivation can be found here. Column 3, lines 4-11 of Harada disclose that forming an insulting layer and electrode by spraying provides better results than providing a sprayed insulating layer around a metallic electrode. Thus, Harada suggests forming both an insulting layer and an electrode using spray coating, but does not suggest combining the insulating spray coating of the claimed thickness with the apparatus of Maki.

Accordingly, it is respectfully requested that the rejection of claims 1 and 3-6 under the judicially created doctrine of obviousness-type double patenting be reconsidered and withdrawn.

Claims 1 and 3-6 were also rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Inazumachi in view of Harada. Reconsideration of this rejection is respectfully requested.

As noted above, Inazumachi and Harada do not disclose a susceptor device including “a convex fitting section disposed on a peripheral section on either one of the ceramic base body or the temperature controlling section; and a concave fitting section disposed on a peripheral section of the ceramic base body or the temperature controlling section so that the convex fitting section and the concave fitting section engage together, and the insulating sprayed layer and the bonding agent layer are sealed from thereoutside,” as required by amended claim 1 of the present application. The monolithic body 37 of Inazumachi does not correspond to the claimed convex fitting section and concave fitting section of amended claim 1 of the present application.

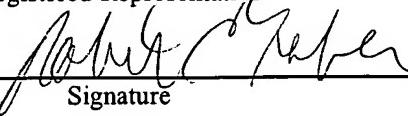
Further, while Harada may disclose a sprayed insulating layer with a similar thickness as that required by claim 1, there is no suggestion to combine this layer with the design of Inazumachi to yield the combination suggested by the Examiner and thus it would not have been obvious to one of ordinary skill in the art to make the combination suggested by the Examiner..

Accordingly, it is respectfully submitted that claim 1, and the claims depending therefrom, are patentable over the cited art for at least the reasons described above.

In light of the remarks and amendments made herein, it is respectfully submitted that claims 1, 3 and 5-6 are patentable over the cited art for at least the reasons described above.

Favorable reconsideration is respectfully requested.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: June 9, 2006

Robert C. Faber
Name of applicant, assignee or
Registered Representative


Signature

June 9, 2006
Date of Signature

Respectfully submitted,



Robert C. Faber
Registration No.: 24,322
OSTROLENK, FABER, GERB & SOFFEN, LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Telephone: (212) 382-0700

RCF:KJB/jl